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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/473,047	12/28/1999	FUMIHIRO NAMIKI		9541

21171 7590 12/19/2001

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EXAMINER

ROY, SIKHA

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 12/19/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/473,047

Applicant(s)

NAMIKI ET AL.

Examiner

Sikha Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Acknowledgement is made of the preliminary amendment (Paper # 4) which has been entered on December 28, 1999.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 6,157,504 to Yamada et al.

Referring to claim 3, Yamada et al. disclose (column 53 lines 51-54, column 54 lines 1-5) a plasma display panel comprising gases for discharge, upper and lower glass substrates, electrodes, phosphor layer for emission of three primary colors and an optical filter with two peak absorption maxima in the visible wavelength range, covering the display surface. The light from the display device contains unnecessary component in the wavelength range of 500 to 620 nm (column 2 lines 60-67). The color of a displayed image can be appropriately corrected by filtering the component. The optical

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filter used in PDP has an absorption maximum (first peak absorption) in the wavelength range of 560 to 620 nm and another absorption maximum (second peak absorption) in the wavelength range of 500 to 550 nm (column 3 lines 1-7).

Regarding claim 3, Yamada et al. disclose the claimed invention except for the limitation of lower value of the wavelength range for the first peak absorbency being 560 instead of 550. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the wavelength range from 550 to 620 nm for first peak absorbency, since optimization of workable ranges is considered within the skill of the art.

Claims 1, 2, 4-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 6,157,504 to Yamada et al. in view of U. S. Patent 5,218,268 to Matsuda et al.

Referring to claim 1, Yamada et al. disclose the invention as substantially claimed with the exception that Yamada et al. do not disclose the transmittance of the optical filter for the wavelength of 585 nm less than the transmittance for the wavelength of 450nm and that for the wavelength of 620 nm.

Matsuda et al. in relevant art of optical filter disclose (column 4 lines 39-66) an optical filter with characteristic of minimum transmissivity at the wavelength of 585nm ($T_{\min} = 575 \pm 20$ nm). A maximum transmissivity occurs at the wavelength of about 450

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nm to 620nm (620nm being less than 630 nm, the range of 450 to 620 nm is included in the range of 450 to 630 nm) and an intermediate transmissivity is attained at the wavelength of 530nm. Yamada et al. teach that the characteristic of the optical filter is such that the following relations are satisfied : $T_{585} < T_{450}$ and $T_{585} < T_{620}$ and $T_{530} < T_{450}$ where T_{585} being the transmittance at the wavelength 585 , T_{450} being the transmittance at the wavelength 450nm, T_{530} being the transmittance at the wavelength 530 nm and T_{620} being the transmittance at the wavelength 620nm. It is further noted that decrease in brightness can be prevented including this optical filter with excellent light selective transmissivity (column 2 lines 50-54) and hence contrast in display can be improved efficiently.

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify the optical filter of Yamada et al. by the characteristic light selective transmissivity and wavelength dependent absorptivity as taught by Matsuda et al. to prevent reduction in brightness and improve contrast and color purity in the display.

Claim 2 recites the limitation of having the peak absorbency wavelength within the range of 550 to 620nm as of claim 3 and hence is rejected for the same reason(see rejection of claim 3).

Referring to claim 4, Yamada et al. in view of Matsuda et al. disclose the claimed invention except for the transmittance T_{530} at the wavelength of 530 instead of the transmittance at wavelength of 525. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the transmittance at the

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wavelength 525 since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980). Hence claim 4 is rejected as the transmittance T_{525} of the optical filter is smaller than T_{450} other limitations being same as that of claims 2 and 3.

Referring to claims 5 and 18, Matsuda et al. disclose the following relationships

$$T_{585} < T_{450} \text{ and } T_{585} < T_{620} \text{ and}$$

$$0.7 \leq (T_{450})/(T_{620}) \leq 1.43.$$

Combining these relations it can be shown that the transmittance T_{585} is smaller than 0.7 times T_{450} .

Referring to claim 6, combining the limitations of claim 4 (transmittance T_{525} is smaller than T_{450}) and claim 5 (T_{585} is smaller than 0.7 times T_{450}) the transmittance T_{585} is smaller than T_{525} .

Referring to claims 7 and 9, Yamada et al. disclose (column 54 lines 11-15) that the optical filter in the plasma display panel can be directly attached on the display surface or attached to the front (outside) surface of the front of a plate (separate component) and plate being arranged in front of the display surface.

Referring to claim 8, Yamada et al. disclose (column 54 lines 46-54) the filter layer is prepared by coating the solution containing dye with the proper optical characteristics and hence is made in the form of a film.

Referring to claim 10, Yamada et al. disclose (column 51 lines 20,21) the optical filter containing organic binder polymers and dyes (anthraquinone, cyanine) having absorption maximum in the wavelength range of 500 to 550nm and 560 to 620nm.

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Referring to claim 11, Yamada et al. disclose (column 51 line 65) the optical filter containing a non-glare (antireflection) layer on top of the filter layer.

Referring to claim 12, Yamada et al. in view of Matsuda et al. disclose the invention substantially claimed with the exception of the wavelength of the first peak absorbency within a narrower range of 580 to 600nm and the transmittance of the optical filter smaller than .5 times the average transmittance in the blue wavelength region and the average transmittance in the green wavelength range larger than transmittance at the first peak absorbency and smaller than the average transmittance in the blue wavelength range.

The range of 580 to 600 nm being narrower and hence included in the range of 560 to 620nm, the optical filter has selective transmissivity with the wavelength of first peak absorbency as claimed and wavelength of second peak absorbency within the values of 500 to 550 nm as recited in the limitation of claim 3. T_{585} , the transmittance of the optical filter at the first peak absorbency is smaller than 0.7 times T_{450} as stated in the limitation of claim 5. The blue wavelength range being 430 to 450 nm it would be within the general skill of a worker in the art to specify the transmittance at first peak absorbency T_{585} smaller than 0.5 times that in the blue wavelength range. The transmittance at the green wavelength range is approximately same as T_{525} and is larger than T_{585} , the transmittance at the first peak absorbency and is smaller than T_{450} as recited in claims 4 and 6.

Claims 13 and 15 recite essentially the same limitations as of claim 7 and 9 and hence are rejected for the same reasons as claims 7 and 9 (see rejection of claims 7 and 9).

Claim 14 discloses the same limitation as of claim 8 and hence is rejected for the same reason as claim 8.

Claim 16 discloses the same limitation as of claim 10 and hence is rejected for the same reason as claim 10.

Claim 17 discloses the same limitation as of claim 11 and hence is rejected for the same reason as claim 11.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to display apparatus with filters.

U. S. Patent No. 4,987,338 to Itou et al.

U. S. Patent No. 5,121,030 to Schott.

U. S. Patent No. 5,652,476 to Matsuda et al.

U. S. Patent No. 5,838,106 to Funada.

U. S. Patent No. 5,939,826 to Oshawa et al.

JP 5-205643 to Shinoda et al.

JP 9-306366 to Sato.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.

Sikha Roy
Patent Examiner
Art Unit 2879



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